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| 10/786,066 | 02/26/2004 | Paul M. Hofman | 0142-0443P | 4002 |

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| EXAMINER | |
| SAJOUS, WESNER | |

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| ART UNIT | PAPER NUMBER |
| 2628 | |

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| 05/21/2007 | ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/786,066

Applicant(s)

HOFMAN ET AL.

Examiner

Sajous Wesner

Art Unit

2628

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,11-17,19,22,24 and 25 is/are rejected.
- 7) ☒ Claim(s) 3,4,6-10,18,20,21 and 23 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 2/26/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

This is a first Office Action on the merit. Claims 1-25 are presented for examination.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-2, 5, 11, 15-17, 19 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Jones et al. (US20070091113).

Considering claims 1 and 2, Jones discloses a method of converting [a digital colour image] having colour values to a digital colour image with improved colour distinction for an observer suffering from a type of colour-blindness, wherein the digital colour image with improved colour distinction is having converted colour values (see paragraphs 27 and 34), the method comprising the steps of: defining a number of main colour values (e.g., red and green color values) of the digital colour image; determining the type of the colour-blindness of said observer, converting the main colour values to converted main colour values such that the converted main colour values are perceived as distinguishable from each other by said observer; and rendering the digital colour

Art Unit: 2628

image with the converted main colour values. See paragraphs 52, 54, 57, 81-85 in light of paragraph 36, which suggests that the converted image is analogous to digital image processing.

Re claim 5, Jones discloses a distribution of the main colour values with respect to confusion lines in at least a part of a colour space is taken into consideration for converting the main colour values, each of said confusion lines comprising colour values which are perceived as indistinguishable from each other by an observer suffering from a type of colour-blindness. See paragraph 72.

As per claim 11, Jones discloses a lightness of the converted main colour values is such that the contrast between the converted main colour values is optimized for said observer. See paragraph 80.

Claim 15 is an apparatus claim that corresponds to the limitations recited in claim 1; it is therefore, rejected under the same rationale as claim 1.

Claims 16-17 are computer program product claims that correspond to the limitations recited in claims 1 and 2; they are therefore, rejected under the same rationale as claims 1 and 2, respectively.

Claim 19 is rejected under the same rationale as claim 5.

Re claim 22, Jones discloses the conversion function is dependent on an image type recognized by analyzing the distribution of the main color values. See paragraphs 57, 81-85.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 12-14, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al. in view of Sarr et al. (US 20070041619).

Regarding claims 12 and 13, Jones discloses an apparatus for converting a digital colour image having colour values to a digital colour image with improved colour distinction for an observer suffering from a type of colour-blindness, wherein the digital colour image with improved colour distinction is having converted colour values, comprises a memory for storing a digital colour image (see paragraph 78); and a processing unit for processing the digital colour image, the processing unit including, a cluster module for determining main colour values of the digital colour image by using a cluster analysis of the colours values in a colour space, and a conversion module for converting, by a conversion function, including an analysis module for determining the type of the colour-blindness of said observer, the main colour values to converted the main colour values such that the converted main colour values are perceived as distinguishable from each other by said observer. See paragraphs 52, 54, 57, 81-85.

Jones fails to teach the use of a cluster analysis to determine colours values in a colour space.

Sarr teaches the use of a cluster analysis to determine colours values in a colour space. See paragraph 587 in light of paragraph 526.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Jones to include the use of a cluster analysis to determine colours values in a colour space, in the same conventional manner as taught by Sarr; in order to enable a user to handle color sweeps seen in a digital image by extracting a few color by the cluster analysis in the color values.

Re claim 14, Jones discloses a colour mapping module for establishing a position in a part of the colour space of the main colour values and of converted main colour values with respect to confusion lines. See paragraphs 73-74.

Claim 25 is an apparatus claim with limitations that correspond to the limitations recited in claim 12; it is therefore, rejected under the same rationale as claim 12.

5. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al. in view of Sarr et al. (US 20070041619) and further in view of White et al. (US 20040041924).

Regarding claim 24, Jones discloses an apparatus for converting a digital colour image having colour values to a digital colour image with improved colour distinction for an observer suffering from a type of colour-blindness, wherein the digital colour image with improved colour distinction is having converted colour values, comprises a memory for storing a digital colour image (see paragraph 78); and a processing unit for processing the digital colour image, the processing unit including, a cluster module for

Art Unit: 2628

determining main colour values of the digital colour image by using a cluster analysis of the colours values in a colour space, and a conversion module for converting, by a conversion function, including an analysis module for determining the type of the colour-blindness of said observer, the main colour values to converted the main colour values such that the converted main colour values are perceived as distinguishable from each other by said observer. See paragraphs 52, 54, 57, 81-85 in light of paragraph 36.

Jones fails to teach the use of a cluster analysis to determine colours values in a colour space.

Sarr teaches the use of a cluster analysis to determine colours values in a colour space. See paragraph 587 in light of paragraph 526.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Jones to include the use of a cluster analysis to determine colours values in a colour space, in the same conventional manner as taught by Sarr; in order to enable a user to handle color sweeps seen in a digital image by extracting a few color by the cluster analysis in the color values.

Jones and Sarr fail to teach a printer provided with a network connection for receiving generated print orders and processing digital image.

White et al. Discloses a printer provided with a network connection for receiving generated print orders and processing digital image. See paragraph 74 in light of paragraph 70.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Jones and Sarr to include a

printer provided with a network connection for receiving generated print orders and processing digital image, in the same conventional manner as taught by White; in order to allow the user to upload or download a hard copy of the digital color image.

Allowable Subject Matter

6. Claims 3-4, 6-10, 18, 20-21, and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, because the prior art of record fail to teach a method of converting a digital colour image according to claims 5 and 19, respectively, wherein the distribution of the converted main colour values with respect to the confusion lines is such that no more than one converted main colour value is allocated on a confusion line (as recited in claims 6 and 20); wherein in the defining step of claim 1, the main colour values are determined by a cluster analysis of the colours of the digital colour image, a main colour value being a representative of the colour values in a cluster (as recited in claims 3, and 18). The prior art of record fail to teach an apparatus for converting a digital colour image according to claims 5 and 19, respectively, wherein the conversion of the main colour values is performed according to a conversion function which allocates to an angle formed between a reference confusion line and a line connecting a main colour value to a confusion point, the confusion point being a point where the confusion lines intersect, a converted angle being the angle between the reference confusion line and a line connecting the

corresponding converted main colour value to the confusion point (as recited in claims 7 and 21).


Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure are as recited in the PTO-892 form.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sajous Wesner whose telephone number is 571-272-7791. The examiner can normally be reached on M-F 9:15-6:45.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on 571-272-7664. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Sajous Wesner
Primary Examiner
Art Unit 2628

WS
5/12/07